AP1020e

AP1020i

AP1010 and AP1020

Dual-stream 802.11n Wireless Access Points

General purpose, enterprise-class wireless LAN performance

The AP1010 and AP1020 are 802.11a/b/g/n enterprise wireless access points with a 2x2:2 MIMO design. The AP1010 features a single radio and operates on either the 2.4 GHz or 5 GHz band to deliver a maximum data rate of 300 Mbps. The AP1020 features dual radios and operates on the 2.4 GHz and 5 GHz bands to deliver a maximum data rate of 300 Mbps per radio. Both access points offer a choice between internal and external antenna models.

The AP1010 and AP1020 simultaneously support data, voice, and video applications with superior reliability and predictability in moderate-density environments. They are designed for a broad range of general purpose uses, including classrooms, dormitories, and branch offices.

Radio frequency virtualization delivers plug-and-play deployment, easy capacity expansion, and seamless mobility. Multiple operating modes give you the flexibility to design a wireless network suited to your specific needs. The access points support centralized, distributed and mesh modes.

As key elements of Meru's Virtualized Wireless LAN solution, the AP1010 and AP1020 Wi-Fi access points deliver a superior end-user experience. As with other Meru access points, they integrate seamlessly with the System Director wireless operating system and the Meru E(z)RF® network management suite to bring intelligent management and resilient wireless services to your network.

Features	Benefits
• 802.11a/b/g/n enterprise wireless connectivity • Radio frequency virtualization • Choice of single- or dual-radio models, each with internal or external antennas • Multiple operating modes: centralized, distributed and mesh modes • Integration with Meru System Director operating system	• Supports resource-intensive applications in moderate-density environments • Simplifies deployment and delivers seamless mobility • Lets you select from a range of options to suit your needs • Offers flexible deployment options for diverse uses • Delivers wireless connectivity with superior reliability and predictability

AP1010 and AP1020
TECHNICAL SPECIFICATIONS

QoS
WMM support
Dynamic WMM rate adaptation
Configurable QoS rules per user and application

OPERATING MODES
Centralized deployment mode
Distributed deployment mode
Mesh mode

SECURITY
WEP, WPA-PSK, WPA-TKIP, WPA2-AES, 802.11i, 802.1X (EAP-TLS, EAP-TTLS, PEAP, LEAP, EAP-FAST, EAP-SIM, EAP-AKA, and EAP-MD5)
802.1X and captive portal authentication against local database on the controller, RADIUS, and Active Directory
RADIUS-assisted per-user and per-ESSID access control via MAC filtering

MANAGEMENT
Centrally managed by any Meru controller running System Director
Automatically discovers controllers and downloads configuration settings for plug-and-play deployment
Upgrades and management using System Director/E(z)RF® Network Manager
Support for SNMP

WIRELESS SPECIFICATIONS
Radio Technologies
AP1010: Single-radio, selectable dual-band 802.11n indoor access point; 2x2 MIMO with two spatial streams; supports both 20 MHz and 40 MHz channel widths
AP1020: Dual-radio, concurrent dual-band 802.11n indoor access point; 2x2 MIMO with two spatial streams; supports both 20 MHz and 40 MHz channel widths
Supported radio technologies:
802.11b: Direct-sequence spread-spectrum (DSSS)
802.11a/g/n: Orthogonal frequency division multiplexing (OFDM)
802.11n: 2x2 MIMO with two spatial streams

Modulation
Supported modulation types:
802.11b: BPSK, QPSK, CCK
802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM

Frequency Band
Supported frequency bands:
2.400–2.485 GHz
5.150–5.250 GHz
5.250–5.350 GHz
5.470–5.725 GHz
5.725–5.875 GHz
Country-specific restrictions apply; adjusted by controller upon approval
Platform supports Dynamic Frequency Selection (DFS)

Operating Channels
2.4 GHz channels: 1 to 11 for U.S. & Canada, 1 to 13 for Europe, 1 to 13 for Japan
5 GHz channels: 36 through 165
Country-specific restrictions apply; adjusted by controller upon approval
Platform supports Dynamic Frequency Selection (DFS) for flexible 5 GHz channel adoption

Data Rate
Data rates supported (Mbps):
802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
802.11b: 1, 2, 5.5, 11
802.11n: 6.5–300 (MCS0 to MCS15)

Transmit Power and Receive Sensitivity (Internal Antenna Model)

	Maximum Transmit Power (EIRP)	Receive Sensitivity at Lowest Data Rate
IEEE 802.11b	23 dBm	-83 dBm
IEEE 802.11g	20 dBm	-83 dBm
IEEE 802.11a	19 dBm	-86 dBm
2.4GHz IEEE 802.11n (HT20)	19 dBm	-83 dBm
2.4GHz IEEE 802.11n (HT40)	19 dBm	-83 dBm
5GHz IEEE 802.11n (HT20)	17 dBm	-86 dBm
5GHz IEEE 802.11n (HT40)	16 dBm	-83 dBm

Transmit Power and Receive Sensitivity (External Antenna Model)

	Maximum Transmit Power (EIRP)	Receive Sensitivity at Lowest Data Rate
IEEE 802.11b	22 dBm	-82 dBm
IEEE 802.11g	19 dBm	-82 dBm
IEEE 802.11a	17 dBm	-84 dBm
2.4GHz IEEE 802.11n (HT20)	18 dBm	-82 dBm
2.4GHz IEEE 802.11n (HT40)	18 dBm	-82 dBm
5GHz IEEE 802.11n (HT20)	15 dBm	-84 dBm
5GHz IEEE 802.11n (HT40)	14 dBm	-81 dBm

Configurable Transmission Power
Transmission power configurable in 1.0 dBm increments

PHYSICAL SPECIFICATIONS
Antenna
AP1010i: Two integrated dual-band omnidirectional antennas with typical gain of 4.0 dBi for 2.4 GHz and 5.0 dBi for 5 GHz
AP1010e: Two extended reverse polarity SMA connectors. Ships with two omnidirectional rubber duck antennas with typical gain of 2.0 dBi for 2.4 GHz and 3.0 dBi for 5 GHz. Other external antenna options are available.
AP1020i: Four integrated dual-band omnidirectional antennas with typical gain of 4.0 dBi for 2.4 GHz and 5.0 dBi for 5 GHz
AP1020e: Four extended reverse polarity SMA connectors. Ships with four omnidirectional rubber duck antennas with typical gain of 2.0 dBi for 2.4 GHz and 3.0 dBi for 5 GHz. Other external antenna options are available.

Power
802.3af PoE and 802.3at PoE
5V external power adapter (sold separately)

Interfaces
One 10/100/1000 BASE-T Ethernet (RJ45), auto-sensing link speed and MDI/MDX, with 802.3af PoE
One RJ45 console
One USB 2.0 port (Type-A connector)
One built-in Kensington security slot (included in AP1010e and AP1020e)
AP1010e: Two reverse polarity SMA connectors
AP1020e: Four reverse polarity SMA connectors

Indicators
Two status LEDs (on front cover) for power, Ethernet activity, and wireless activity

Mounting
Wall or ceiling mount
Access point includes:
Mount over 15/16" T-bar (no tools required)
Lockable wall-mount kit (included in AP1010e and AP1020e)
Lock key to lock the access point to a ceiling (for AP1010i and AP1020i)
Other mounting kits sold separately:
MNT-SCRMKIT-03, mounting adapter for recessed ceiling or narrow T-bars (5-pc package)
MNT-SCRMKIT-04, mounting adapter for Interlude/Silhouette T-bars (5-pc package)
MNT-WMKIT-01, optional lockable wall-mount kit for AP1010i and AP1020i (5-pc package)

Dimensions
AP1010i: 6.75" x 6.50" x 2.50" (17.10 cm x 17.10 cm x 5.70 cm)
AP1010e: 6.33" x 4.50" x 1.50" (16.10 cm x 11.40 cm x 3.80 cm)
AP1020i: 6.75" x 6.50" x 2.50" (17.10 cm x 17.10 cm x 5.70 cm)
AP1020e: 6.50" x 4.50" x 1.50" (16.10 cm x 11.40 cm x 3.80 cm)

Weight
AP1010i: 0.95 lb (0.44 kg)
AP1010e: 1.08 lb (0.49 kg)
AP1020i: 1.01 lb (0.46 kg)
AP1020e: 1.12 lb (0.51 kg)

Environmental
Operating temperature: 32°F to 122°F (0°C to 50°C)
Operating humidity: 5–95% (non-condensing)
Storage temperature: -40°F to 185°F (-40°C to 70°C) ambient
Storage humidity: 5–95% (non-condensing)

Regulatory Approval
FCC
EU R&TTE Directive 1995/5/EC
RS-210
ICES-003
VCCI
ARIB-STD33 & STD66
For more country-specific regulatory approvals, please contact your Meru representative.

Certifications
Wi-Fi certified 802.11a/b/g/n

RoHS Compliant
WEEE Compliant
REACH Compliant
UL2043 Compliant (AP1010e and AP1020e only)

Warranty
Limited lifetime warranty

Part Numbers
AP1010i
Dual-band, selectable single-radio 802.11a/b/g/n access point; includes integrated dual-band antennas

AP1010e
Dual-band, selectable single-radio 802.11a/b/g/n access point with two external RPSMA antenna connectors; includes two dual-band rubber duck antennas
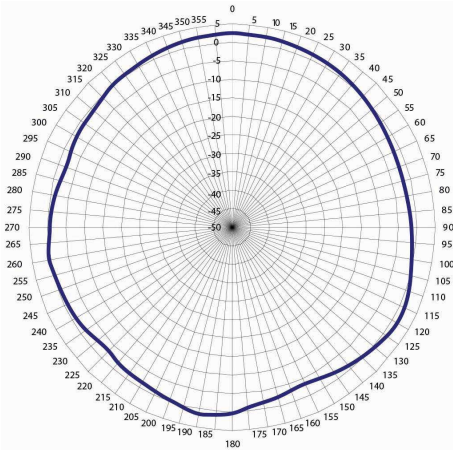
AP1020i
Dual-band, concurrent dual-radio 802.11a/b/g/n access point; includes integrated dual-band antennas
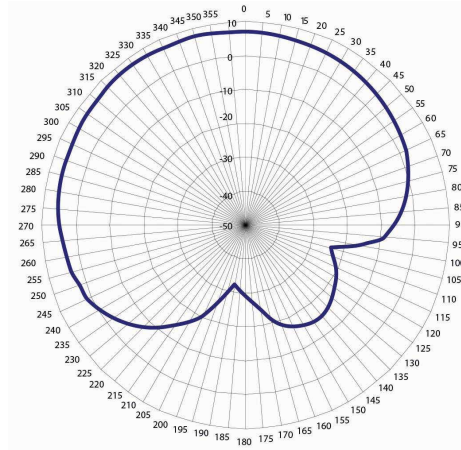
AP1020e
Dual-band, concurrent dual-radio 802.11a/b/g/n access point with four external RPSMA antenna connectors; includes four dual-band rubber duck antennas
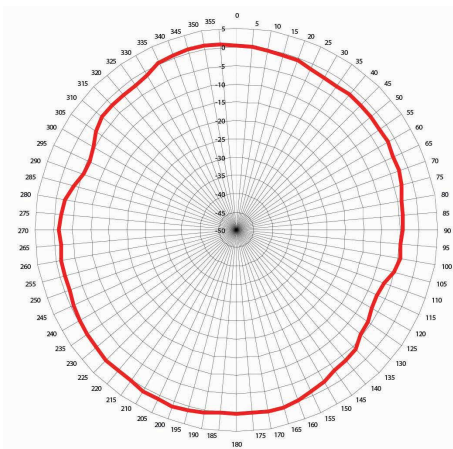
AP1010 and AP1020
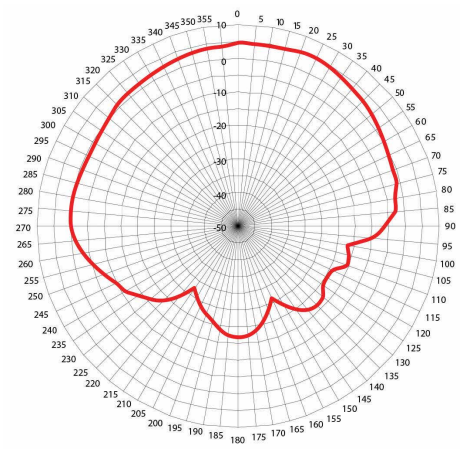## Antenna Radiation Patterns (Internal Antenna Model)

2.4 GHz H-plane

2.4 GHz E-plane

5 GHz H-plane

5 GHz E-plane

Meru delivers an all-wireless network that fully supports the enterprise, delivering a consistent, interactive experience for all users. No matter what applications they are running. No matter how many other users are on the network.

For more information, visit **www.merunetworks.com** or email your questions to: meru**info@merunetworks.com**